



A Review of the Possible Implication of COVID-19 Lockdown on Eating Habits

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ABSTRACT

The global lockdown due to the recent outbreak of COVID-19 could signal the shift in many a global phenomenon including changes in eating habits around the world. This is because lockdown in itself restricts the availability of foodstuff that are normally available to all at all time. Rather, most purchases during this time are more influenced by consumer income levels and availability of food rather than knowledge on the healthiness of the food itself. However, this period is crucial for many groups of people: for kids because of their increased exposure to television advertisements aimed at the sale of junk foods, those in their adolescence because it's the age of habit development and the wrong habit gained during this time would go on to influence their adult life. In general, it could lead to apparent transmission of epigenetic and/or phenotypic variation down to the next generation cause major changes in lifestyle leading to increased obesity and hyperglycaemia in many countries. This study reviews scientific work in the field of eating habit development, factors influencing these habits, the effect of unhealthy eating habits and its effect on the youth, adults and shift worker. The authors think that physical activity, proper eating habits, nonindulgence in binge eating could positively affect eating habits during the COVID lockdown.

Key Words: Eating habits, COVID-19, Lockdown, Stress eating, Binge eating, Eating frequency

INTRODUCTION

Eating habits have been a cause of great concern for parents, adults and researchers equally. While parents are constantly worrying about the food choices of their children and the regularity of their diets, adults are more and more conscious of their body and its response to foods¹. Researchers are in a way trying to find a balance between the thought process of a parent and an adult. They would like to have a perfect world wherein the worlds of Hippocrates food would be a source of medicine to one's body. Over the years, researchers have tried to link food, frequency of eating, eating habits and many other factors to work up the right way of eating². In this review, we would like our readers to get an understanding about eating habits, why it's important to develop the right eating habits, factors that would influence eating habits, effects of unhealthy habits and if the present constraint due to COVID-19 outbreak potentially affect our eating habits.

Eating Habits and the Age of habit development

It is universally accepted that physical wellbeing is interconnected closely with the food that we eat or on healthy diets^{3,4}. However, one among the many major challenge's governmental institutions, nutritionist and promoters of healthy diets face is the question of what interrelated parameters promotes healthier eating. A string of researchers^{5,6,7,8,9,10} over the last decade have been able to link a range of characteristics such as personal preferences, psychological impact, informational, and environmental factors to why people consume a certain food.

The World Health Organization¹¹ recognises adolescence as the phase of life when human dietary habits develop. This they say is also the age at which dietary habits are strongly influenced by factors such as socio-cultural, emotional, and behavioural factors. This is also is a phase in human life when they become more independent and have access to foods away from the home environment. However, changes in eating habits, food preferences and shift in the dietary pat-

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ISSN: 2231-2196 (Print)

ISSN: 0975-5241 (Online)

Received: 13.07.2020

Revised: 02.09.2020

Accepted: 23.09.2020

Published: 06.10.2020

tern are not only an act of individualism and social expressions^{12,13,14,15} but also is an intrinsic factor that can be traced to a person's sense of belonging to a community¹⁶.

Influencers of Eating Habits

Research studies on the influence of Malaysian people against the mixed food culture in Malaysia showed that eating reinforces one's social identity because food preferences and preparation is a way of projecting one's sense of community¹⁷. This idea has perpetuated the system in so much as, traditional practices of food preparation have become and identity and in sense differentiates between them that belong to the community and others, all based on their knowledge or lack thereof of cultural eating practices.

Though eating habits have a cultural twist, much of it is simply based on impulsivity. Impulsivity influences the otherwise multifaceted individual to act without the foresight of potential risks or consequences^{18,19}. Impulsivity is known to manifest in a range of illnesses such as drug use disorder²⁰, impulse-control disorder (ICD)²¹, behavioural addictions^{22,23,24} and Attention-Deficit Hyperactivity Disorder (ADHD)²⁵. One of the theories that were used to explain substance use disorder i.e action-to-habit theory suggests that, the cause of most drug use is linked with impulsive intake of drugs that later turned compulsive by excessive indulgence that lead to habit formation²⁶.

This action-to-habit theory is a tool to understand eating habits concerning compulsive overeating²⁷. In certain western societies where there is a variety of palatable foods readily available, overeating is influenced by the impulsivity of individuals. These splurges of overeating were also linked with prompts such as visual telemarketing that triggered further food craving and splurge-eating. This could ultimately lead to an impulsive action of overeating to transition into a compulsive form of overeating²⁸.

Beliefs in food systems differ from culture to culture and also concerning countries. Most Indian and Canadian adolescents believed home-cooked foods to be healthier in terms of micro and macronutrient content²⁹. However, rural Indian adolescents also appreciated the importance of contaminant-free food. Opinions varied among this test group when it came down to consuming meat, while Canadian adolescents acknowledged the health impact of meat in their diets, Indian adolescents not so much. The perception of the advantages of healthy eating also varied among respondents, while rural Indians identified improved energy as a benefit of healthy eating, Canadians and urban Indians identified disease prevention as a benefit of healthy eating. Interestingly, some of the barriers identified by both groups of adolescence included peer pressure, obtainability and affordability of unhealthy foods. Academic stress and lack of time were also reported to be barriers for Urban Indians and Canadian girls.

The problems associated with children are a tad different. The modern-day child practices much more power in the decision-making process of a purchase in comparison to children in the past generation³⁰. Children today are more forthright and vocal in reasoning with their parents about their requirement for purchasing a product. Recognising this shift in family dynamics, advertisers are creating advertisements targeting children as they know the kind of impact has on product sales. Children consequently spend more time on the television and their sleeping habits are greatly affected³¹. Most shifts in eating habit changes can be traced to children watching fast food advertisements on TV amounting to much of the obesity in the children. Some researchers³² have proposed a ban on advertisements as a way to check the rising obesity.

Research studies also observed that a students' knowledge of healthy eating habits was rooted in what was in offer in their tables for meals and parents' income levels paid a significant influence on what was on offer³³. Most parents bought home foods based on their income rather than on their knowledge of healthy foods. Naturally, parents indirectly influenced their children's eating habits as foods placed on the dining table at home turned to be the model healthy eating pattern for most children³⁴.

Effects of Unhealthy Eating habits

In the USA, overweight and obesity rates have dramatically increased leading to a health epidemic of sorts of the current era. Sadly, this has become the case globally and is no more a localised phenomenon^{35,36}. Research also recognises obesity as a serious health risk factor which required risk behaviour interventions in young men³⁷. In the U.S, for the population aged between 20-39, the incidence rate of obesity has reached 29%³⁸. Studies have identified that among the young, physical inactivity and unhealthy eating habits contributed to adverse effects on the weight status and their future health as adults³⁹.

It can be pointed out that alongside a shift in lifestyles and consumption of junk foods have accounted for most of the health issues including obesity which accounts for more than 300000 deaths annually in the U.S alone. This can be linked to the growing number of fast-food restaurants in the U.S⁴⁰. On the other hand, studies on the Ukraine Famine of 1932-'33⁴¹ and the Dutch 'Hunger Winter' Famine of 1944-45⁴² suggests an association between prenatal famine exposure and adult type 2 diabetes mellitus. This could mean that there is an apparent possibility of transmission of epigenetic and/or phenotypic variation down the generations if one generation is exposed to prenatal famine exposure. This intergenerational transmission in turn could cause major changes in lifestyle leading to increased obesity and hyperglycaemia⁴³.

How would eating habits affect shift work during a lockdown?

During these altered times of COVID-19, many professionals in the field of medicine such as doctors, nurses and virologists are either working overtime or in altered routines as in the case of most sanitary workers, IT professionals working from home, academicians conducting online classes both in regular working hours as well as the works during odd timings and environments. Apart from the apparent change in shift is the change in routine that doesn't get considered much. This shift could lead to altered routines that disrupt circadian rhythms. The human circadian rhythm adheres to a 24-hour cycle that regulates the normal functioning of our body inclusive of behavioural, endocrine and neurophysiological processes. In a sense, if the circadian rhythm is not in balance it could disrupt our sleep/wake cycle, blood pressure and the release of several hormones. Results from research⁴⁴ suggests that altered sleep patterns could shift the synchrony with light and dark and could disrupt circadian rhythms.

Apart from disruptions circadian rhythms, eating at an odd time, such as late-night eating can alter glucose metabolism⁴⁵. Studies have also reported a higher risk to overweight and obesity⁴⁶, metabolic syndrome⁴⁷, type 2 diabetes mellitus⁴⁸ and cardiovascular diseases⁴⁹.

CONCLUSIONS AND RECOMMENDATIONS

Primary health workers and shift workers whose eating patterns are disrupted during this lockdown could have serious health implications if they do not maintain proper eating habits. Research on shift workers highlighted that the psychological and social health of shift workers can be adversely affected due to the predictable and unconventional shift patterns⁴⁴. In terms of shift regulating in the medical profession, some of the following recommendations from prior research⁵⁰ could be applied to the present times:

- Forward rotation sequence - clockwise direction starting with morning shifts to afternoon shift and ending with nightshifts with no consecutive shifts.
- Restriction of consecutive night shifts to three nights - especially for staff keener on the long run at nights to get into a routine.
- The restriction of shift start time to eight or later in the morning to ensure physical and mental freshness of staff.
- Varied shift lengths - night shift to be shorter than day shift as it is virtually impossible to at the same intensity at night. Shift lengths not to exceed 12-hour shifts to ensure the quality and quantity of sleep for staff.
- Regular shift rotas enabling staff to organise their life better.

As theorised through the action-to-habit theory compulsive overeating during the lockdown period could lead to altered

unhealthy eating habits. Overeating can be overcome by mixing elements of a food pyramid, Mediterranean pyramid or MyPlate system. The most recent Mediterranean associate's for example includes social aspects of happiness that come from cultural and environmental often associated with homemade and traditional foods. They also point out the use of locally and seasonally available agricultural produces and products⁵¹.

Lack of physical activity and unhealthy dietary habits during this lockdown period could lead to potentially adverse effects on weight status in our young leading them to an unhealthy adulthood future. The World Health Organisation⁵² recommendations for physical activity can be adhered to by all age groups.

Those in the age group of 5-17 years:

- Minimum 60 minutes of moderate to vigorous-intensity physical activity every day.
- Vigorous-intensity activities should be aimed at strengthening muscle and bone and done at least thrice a week.

Those in the age group 18-64 years:

1. 150 min. of moderate-intensity or 75 min. of vigorous-intensity physical activity throughout the week.
2. Muscle-strengthening activities for every major muscle groups twice a week.
3. Aerobic activity in 10 minutes bouts.

Those in the age group 65 years and above:

1. 150 minutes of moderate-intensity physical activity spread across the week.
2. The physical activity aimed at enhancing balance to prevent falls for people with low mobility on 3 days in a week.
3. Muscle-strengthening activities for every major muscle groups twice a week.
4. Aerobic activity in 10 minutes bouts.

Availability, access, affordability and undue pressure through advertisements of unhealthy foods could lead to binge eating. Studies point out that there is a need to work on personal core low self-esteem and emotional regulation among binge-eater to reduce binge eating⁵³. Therefore, this period of lockdown can be used to improve the self-esteem and build the emotional balance of our kids.

It would be wise to remember that there is always a possibility of transmission of epigenetic and/or phenotypic variation through generations⁴³. It should also be realised that the lockdown period in many countries is similar to the situation faced during famine exposure. The similarities would include the lack of food security and availability and accessibility to essentials food items and as such could lead to increased obesity and hyperglycaemia globally.

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